REMARKS:

Claims 1 to 11, 13 to 35, and 37 are pending. Claims 1, 14, 24 and 30 are the independent claims. Claims 1 and 30 have been amended. Entry of this response, reconsideration and further examination are respectfully requested.

Claim Rejections

All pending claims were rejected 35 U.S.C. § 112, ¶ 2, for alleged indefiniteness. In particular, the Examiner stated the following (emphasis in original):

> One thing that remains unclear is ... exactly **what** is the relationship relative **to**? Is this a relationship relative to amino acid sequences? Protein folding properties? Genetic maladies? Genetic advantages? Birth defects? Germ line versus non-germ line effect? Exactly <u>what is the relationship to</u>? <u>What is the invention</u>?
> Further, exactly **how** is this relationship found? Through traditional statistical methods? Which ones? Using artificial intelligence clustering techniques? Which ones? Through empirical testing on animal models? What animals and what tests? Through the collection of evidence from scientific papers? Hmmmm...perhaps via the collection of anecdotal evidence maybe? How is the relationship found?

The Office Action appears to be asking Applicants to specify in the claims *exactly* what the relationship is relative to and *exactly* how the relationship is found. However, exactness is not the proper standard for claim language under 35 U.S.C. § 112, ¶ 2. In this regard, Applicants respectfully reference MPEP § 2173.02, which states in relevant part the following (emphasis in original):

When the examiner is satisfied that patentable subject matter is disclosed, and it is apparent to the examiner that the claims are directed to such patentable subject matter, he or she should allow claims which define the patentable subject matter with a <u>reasonable</u> degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire.

The independent claims are discussed below in light of this standard, namely a

"reasonable degree of particularity and distinctness."

<u>Claim 1</u>:

Amended claim 1 recites the following:

1. A method including
accessing information about a plurality of gene expression values;
generating from said information a hypothesized relationship about genes relative to said information from a relationship between one or more sets of said gene expression values, said hypothesized relationship having a likelihood of being due to chance not exceeding a predetermined value;
retrieving data regarding interests of each agent of a plurality of agents;
identifying at least one agent of the plurality of agents such that the data regarding interests of said at least one agent satisfies at least one predetermined test indicating that said at least one agent has a potential interest in the hypothesized relationship; and
sending information about said hypothesized relationship to said at least one agent.

The recited hypothesized relationship about genes in this claim is "relative to said information." For example, if the information about the plurality of gene expression values concerns a particular disease or disorder, the hypothesized relationship could be relative to that disease or disorder. If the information concerns a particular physical characteristic of a study group, the hypothesized relationship could be relative to that physical characteristic. More generally, the

relationship could be relative to any part of any information for which gene expression values are available.

As recited by claim 1, the hypothesized relationship is generated from a relationship between one or more sets of gene expression values, in other words from a relationship of some gene expression value(s) relative to other gene expression value(s). The exact way in which the relationship is found depends on the nature of the accessed information about the gene expression values. Depending on the nature of the information, some or all of the techniques suggested in the Office Action could be used.

For example, claim 4 recites application of a statistical technique to the gene expression values: genes from two data sets that match might be indicative of a relationship between the genes and possibly of a relationship between other information associated with the data sets. Claim 5 recites comparing frequencies of upstream nucleotide sequences: genes with matching upstream sequences might be related or might be related to other information associated with the data sets. Claim 6 recites examining and extending gene pathways. These pathways might be indicative of relationships between the genes or other information associated with the genes. Claim 7 recites evaluating correlation values with respect to an identified gene or gene sequence. This is a statistical technique. Of course, the invention recited by independent claim 1 is not limited to these examples recited by the dependent claims.

In view of the foregoing, Applicants believe that claim 1 is sufficiently clear to define an aspect of the invention with a "reasonable degree of particularity and distinctness."

Reconsideration and withdrawal are therefore respectfully requested of the § 112, ¶ 2, rejection of claim 1 and its dependent claims.

Claim 14:

Claim 14 recites the following:

> 14. Apparatus including
> memory recording information about a plurality of gene expression values;
> an autonomous software element disposed on a computing device, said autonomous software element having access to said memory;
> said memory recording information about a hypothesized relationship between said gene expression values, said hypothesized relationship having the properties of (1) having a likelihood of being due to chance not exceeding a predetermined value, and (2) satisfying at least one predetermined test indicating that said hypothesized relationship is of potential interest to at least one agent; and
> a communication link coupled to said memory and capable of sending information about said hypothesized relationship to said at least one agent.

The recited hypothesized relationship in this claim is "between said gene expression values." In other words, the relationship is relative to other gene expression value(s). Again, the exact way in which the relation is found depends on the nature of the information about the gene expression values. Depending on the nature of the information, some or all of the techniques suggested in the Office Action could be used. Examples of some of these techniques are provided in the dependent claims. Of course, the independent claim is not limited to these examples.

In view of the foregoing, Applicants believe that claim 14 is sufficiently clear to define an aspect of the invention with a "reasonable degree of particularity and distinctness." Reconsideration and withdrawal are therefore respectfully requested of the § 112, ¶ 2, rejection of claim 14 and its dependent claims.

Claim 24:

Claim 24 recites the following:

> 24. A memory recording information including instructions, said instructions interpretable by a computing device, said instructions including
> an autonomous software element having access to information about a plurality of gene expression values;
> a first software element coupled to said information and capable of generating a hypothesized relationship between said gene expression values, said hypothesized relationship having the properties of (1) having a likelihood of being due to chance not exceeding a predetermined value, and (2) satisfying at least one predetermined test indicating that said hypothesized relationship is of potential interest to at least one agent other than said autonomous software element;
> a second software element coupled to information about said hypothesized relationship and capable of sending information about said hypothesized relationship to said at least one agent.

As with claim 14, the recited hypothesized relationship in this claim is "between said gene expression values." The discussion of claim 14 above is equally applicable to claim 24. For the reasons given therein, reconsideration and withdrawal are respectfully requested of the § 112, ¶ 2, rejection of claim 24 and its dependent claims.

Claim 30:

Amended claim 30 recites the following:

> 30. A method including
> accessing information about a set of genes and proteins;
> generating from said information a hypothesized relationship involving at least one of the following: a set of proteins, SNPs and chemicals pertaining to said information, said hypothesized relationship relative to said information and having a likelihood of being due to chance not exceeding a predetermined value;
> retrieving data regarding interests of each agent of a plurality of agents;

identifying at least one agent of the plurality of agents such that the data regarding interests of said at least one agent satisfies at least one predetermined test indicating that said at least one agent has a potential interest in the hypothesized relationship; and

sending information about said hypothesized relationship to said at least one agent.
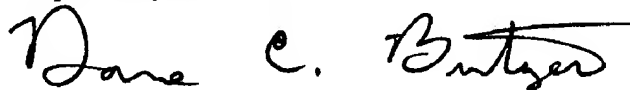
As with claim 1, the recited hypothesized relationship about genes in this claim is "relative to said information." The discussion of claim 1 above is equally applicable to claim 30. For the reasons given therein, reconsideration and withdrawal are respectfully requested of the § 112, ¶ 2, rejection of claim 24 and its dependent claims.

Closing

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney can be reached at (614) 486-3585. All correspondence should continue to be directed to the address indicated below.

Respectfully submitted,

Dated: February 9, 2005   Dane C. Butzer
                                          Reg. No. 43,521

Swernofsky Law Group PC
P.O. Box 390013
Mountain View, CA 94039-0013
(650) 947-0700